

## Rural youth with mild head injuries face higher medical costs, less care

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Janessa M. Graves, assistant professor of nursing at WSU Spokane. Credit: WSU

Families of rural children with mild head injuries pay more for medical care and get less of it, a Washington State University analysis has found.

Janessa M. Graves, an assistant professor of nursing at WSU Spokane, analyzed data on more than 380,000 children with mild traumatic [brain injuries](#), which usually involve concussions. They account for almost all types of traumatic brain injury, moderate and severe being the other two. On the whole, traumatic brain injury is a leading cause of death and disability among children and adolescents in the United States.

Patients with [mild traumatic brain injury](#) are hospitalized less frequently and often get treated entirely as outpatients. About one-third have ongoing symptoms like cognitive fatigue, inattention and difficulty remembering things for weeks and months after their injury.

Yet Graves found the rural patients got less care. Meanwhile, their [healthcare costs](#) were significantly higher than those of urban youth in the six months after being injured.

Their costs were an average of 11 percent higher, and they were less likely to use specialty services. They were half as likely to get speech therapy and 40 percent less likely to get psychiatric care.

"There's such an [economic burden](#) on rural people for healthcare," Graves said. "To get appropriate healthcare is a real challenge, not to mention the fact that rural kids may be more likely to get traumatic brain [injury](#) than urban kids, and they often have more severe injuries."

The study, published in the journal *Health Services Research*, underscores a darker side of rural life. Rural residents almost invariably spend more time getting from one place to another, often on dangerous two-lane highways that lead to higher rates of bad crashes.

In one sense, the children included in Graves' study were among the more fortunate: They had commercial health insurance through private, employer-sponsored health plans. This is also how Graves and her

colleagues could analyze their use of healthcare, tapping into a commercial database of 20 million subscribers.

Among the study's key findings:

- Urban children were more likely to have at least one speech therapy visit and at least one psychiatry or psychology visit. Urban children also had more psychiatry or psychology visits.
- Rural children with mild [traumatic brain injury](#) were more likely to have multiple traumatic injuries.
- Rural children were 15 percent more likely to have at least one physical or occupational therapy visit, possibly because they are more likely to have more severe injuries than urban children. Those with more visits had 51 percent greater costs.
- Health care costs for rural children averaged \$2,871, almost \$400 more than the average \$2,479 for urban children.

"That's a disservice to communities that are already not well off," Graves said.

The findings underscore the need for more healthcare services in rural areas, Graves said. For example, she said, there are [children](#) going all the way to Seattle from Idaho because Spokane specialists are overwhelmed as they try to serve such a large area.

"The more difficult we make it to access care," she said, "the less likely that people are going to get the care that they need."

**More information:** Janessa M. Graves et al, Rural-urban disparities in health care costs and health service utilization following pediatric mild traumatic brain injury, *Health Services Research* (2018). [DOI: 10.1111/1475-6773.13096](#)

Provided by Washington State University

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